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ABSTRACT

A study examined the status of industrial education (IE) subjects in 35 Kenyan academic secondary schools, the aspiration of students, and their destination after leaving the lower stage of the secondary system. Data sources were documentation, examination results, interviews with Kenyan and Swedish International Development Authority officials, observation of workshops during visits to IE schools, and surveys. Staff did not perceive IE as a "soft option" (easy to pass) or as being more suited for academically weak students. IE examination results were, however, on the average poorer than the results in English and mathematics. IE did attract students who do well in mathematics. Findings also showed that IE teachers are slightly more satisfied than their academic colleagues. Students who had experienced IE had a positive view of these subjects and exhibited great interest in continuing their education and in entering occupations of a technical/practical kind. One year after the "O" Levels examination, negligible differences in main activity (further education, employment, etc.) were found among ex-students with varying degrees of exposure to IE. (YLB)

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DIVERSIFIED SECONDARY EDUCATION IN KENYA: THE STATUS OF PRACTICAL SUBJECTS AND THEIR USES AFTER SCHOOL

Jon Lauglo and Anders Närman

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DIVERSIFIED SECONDARY EDUCATION IN KENYA:

THE STATUS OF PRACTICAL SUBJECTS AND THEIR USES AFTER SCHOOL.*

by Jon Lauglo and Anders Närman

In many countries, present policy for mainstream secondary schools favours curriculum change in a practical or vocational direction. A number of recent literature reviews and studies have examined some of the reasons and rationales for such policies, the problems of implementing them as viable pedagogic systems in the schools, and aspects of their external effectiveness in some countries (Grubb, 1985; Lillis and Hogan, 1983; Lillis, 1985; Psacharopoulos and Loxley, 1985). It is a truly international trend in that it transcends the divide between rich and poor countries; and it is manifest both in socialist countries and liberal democracies.

There are long-established concepts of general education which support the inclusion of practical subjects within general education. Thus both North American prevailing concepts of general education, with their Pragmatist philosophical underpinnings, as well as the Socialist ideal of polytechnical education provide rationale for such subjects as part of general secondary education, regardless of the immediate labour market context (Lauglo, 1983). But in the main, the reason for the present trend lies outside educational ideology. It has become politically important because of the internationally depressed labour markets for secondary school leavers. Thus, the goals of 'curriculum diversification' in a practical direction often include that of transmitting skills and attitudes which will be useful in gaining jobs and within employment. The common feature is a quest for more directly vocational relevance than 'academic' curricula are said to have. In developing countries, particular emphasis is sometimes also given to generating favourable attitudes to living and working in rural areas and to the goal of preparing for self-employment.

The patterns of such 'vocationalisation' vary. Establishing or expanding school-based vocational education that is institutionally separate from the prevalent 'academic' secondary schools is one example. But often policies aim to establish compulsory or optional vocationalised components within otherwise 'academic' curricula in mainstream secondary schools. In the latter case, the goal tends to be 'pre-vocational': developing skills and attitudes conducive to acquiring more specific work skills after leaving school - either in further schooling or on the job. In either case, the aim is to prepare pupils for entry into occupations which are manifestly related to the practical subjects they study at school. In practice, there is no clear distinction between vocational and pre-vocational education, especially since also school-based vocational education often is regarded as incomplete and requiring further on-the-job training.

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*The sponsorship by the Swedish International Development Authority of the reported research project is greatly appreciated, as is the personal interest taken in the project by Kenth Wickmann of SIDA.

There is a long-standing controversy about how far such curriculum diversification in fact increases the economic usefulness of education (Foster, 1965; Weeks, 1978; Blaug, 1973). Even about higher education, Psacharopoulos (1980) has presented evidence that questions the superiority of purportedly more 'applied' and technology orientated subjects in terms of better economic cost-benefit ratios. But follow-up studies of students into the labour market have been few and far between. In the main, recent large-scale (but short-term) tracer studies support the pessimists. Cf. Wilms & Hansell, 1982 (in the United States) and Psacharopoulos & Loxley, 1985 (in Colombia and Tanzania). But long-term tracer studies are needed for more reliable data about the degree to which practical subjects give a labour market advantage, especially so in developing countries where school leavers often face a period of job search that may take several years during which they undertake a variety of short-term economic activities (Hoppers, 1985:22).

Quite apart from their exernal effectiveness for labour market advantage, practical subjects are fraught with a number of difficulties which need to be overcome before they can established as viable pedagogic systems. They are invariably more expensive than those academic subjects which at a minimum can be taught on a purely chalk-and-talk basis, partly because of the cost connected with equipment, workshops, and materials requirements; and partly because they usually need to be taught in smaller classes. Their facilities, equipment, and materials also pose greater demands in terms of managing logistics requirements and the initial establishment of these subjects. Competent teachers are difficult to recruit and train - and to keep, if their competence is better paid in other jobs. A pervasive problem in many countries has been the lack of attraction of practical subjects to parents and pupils. Such subjects are commonly said to suffer from demoralisation among teachers and pupils alike: It is often claimed that both groups are reluctant participants in this area of education, and would veer towards better rewarded activities if they were given the opportunity.

The status of such subjects is likely to reflect the perceived post-school opportunities to which they lead - even when the subjects officially are defined as part of 'general education'. The labour market advantage - or lack of such - that these subjects are thought to give will be one important factor in this regard. Another important factor will be whether the study of these subjects implies that opportunities for further education of an 'academic kind' will be curtailed. Thus, the status of practical subjects in the schools and the post-school opportunities to which they are perceived to lead, are closely interrelated issues.

In the present study, which is more fully reported in a series of documents from the Education Division of The Swedish International Development Authority (Lauglo, 1985a; Närman, 1985; Cumming, Davies, Lillis, & Nyagah, 1985), we shall examine the status of 'Industrial Education' subjects in 35 Kenyan academic secondary schools, the aspirations of students, and their destination after leaving the lower stage of the secondary system.

1. The 'Industrial Education' Subjects in Kenyan Schools

The Industrial Education subjects (hereafter referred to as IE) consist of Wood Technology and Metal Technology which are taught as a combination at 24 schools, and of Power Mechanics and Electrical Technology which are taught as a combination in 10 schools. Moreover, there is one school which only offers Wood Technology. Each school is typically provided with two IE workshops, one for each IE subject offered. In these 35 government-maintained secondary schools, IE is usually compulsory in the two first forms (grades). But in forms 3 and 4, IE is offered as an optional subject that is usually available to about one third of the students. The students continuing with IE prepare for the lower secondary Kenya Certificate of Education (KCE) examination ('O'Level) in one of the two IE variants available at each school. The IE subjects are partly assessed by a practical project or exam, and partly by an examination in related theory.

Students taking IE also prepare for at least 5 KCE examinations in academic subjects. In each form, students usually devote about 6 weekly class periods to IE - only a small proportion of their total weekly timetable of some 40+ class periods. Thus, IE functions as a 'practical' supplement to an otherwise entirely 'academic' course. By taking IE as a KCE subject, students may still hope to qualify for academic upper secondary school; and their range of subjects for that purpose will be only slightly restricted. IE subjects do not continue in the upper secondary stage which prepares for higher education. Nor does IE confer any officially recognised qualification or priority for selection to jobs or training schemes. The sole exception is teacher training in IE itself, but access to such training also requires upper secondary credentials.

With few exceptions, the IE schools are boys schools. The schools constitute a small part of the government-maintained Kenyan secondary school sector of 413 schools. There is also much larger number of Harambee (local self-help) schools. The government-maintained sector is very superior to Harambee schools in terms of examination results. Within the government-maintained sector, IE has been introduced disproportionately in 'advantaged' schools. Thus, IE is found in a small number of schools of relatively high status (larger, longer-established schools with 'good' exam results). The great majority of them (27 schools) were in the old Kenyan grading system classified as 'A'schools - the very best grade. One might expect that this has eased the management of introducing the IE subjects (Cf. Lillis, 1985). But once could also argue that the appeal to students would be greater in schools where the prospect of continued academic education would seem more remote than in these 'elite' institutions from which more than 40% of the students continue to the upper academic stage (form 5), as shown in Table 4.

During 1969 to 1981 IE received substantial support from Swedish Aid. SIDA provided volunteer teachers to establish and teach IE until Kenyan IE-teachers could be trained; it established and initially staffed teacher education in IE; it built/renovated and equipped/upgraded IE workshops. SIDA also established a unit to assist nationally in the maintenance of these workshops. Thus, the IE subjects benefitted from substantial and comprehensive external assistance until 1981.

All four types of IE workshops were provided with relatively sophisticated equipment including a number of power driven machines. One may query the appropriateness of the equipment in terms of expense and students' opportunity to use their skills later in life. But it is likely that the equipment's connotation of 'advanced technology' helped to raise the status of the IE subjects in the eyes of students. The level of equipment may also have conveyed an exaggerated impression of the vocational opportunity associated with IE. Officially, the IE subjects aimed to be part of general education. But the IE subject syllabuses have a distinctly pre-vocational character. Further, both by teachers and students IE tends to be perceived as preparatory for work or further training in the different IE specialties.

2. The Scope of the Research Activities

The research extended from 1983 to 1985 and was carried out by an international team. In addition to the authors, it included: C E Cumming (Moray House College of Education), Martin Davies (SIDA Nairobi), Kevin Lillis (University of London), B G Nyagah (Inspectorate, Nairobi), and Daniel Sifuna (Kenyatta University).

The sources of data were: documentation, examination results, interviews with Kenyan and SIDA officials, observation of workshops during visit to most IE schools; and a number of surveys which used a mixture of group and individual interviews, and questionnaires. The methodology employed is discussed in Cumming & Lauglo (forthcoming). These groups were surveyed: headmasters of IE schools, Swedish former volunteer teachers of IE, Kenyan IE teachers and teachers of other subjects, parents of IE students, groups of students with varying degrees of experience of IE (4 years of IE, 2 years of IE, no IE), and a small exploratory survey of employers. The student surveys included several small scale tracer studies and one large scale follow-up of students one year after the lower secondary KCE examination.

The Evaluation sought to answer a wide range of questions: What are aims and objectives of IE? What has the international experience been with similar subjects? What influences have shaped the development of IE in Kenya? How do the schools offering IE compare with other secondary schools? What do students, parents, teachers and headmasters expect from IE? What is the status of IE in the schools? Do the various IE subjects differ in their attractiveness to students? What kind of student takes IE as an examination subject? Is IE a 'soft option' that attracts students because it is thought to be easy to pass or do well in? How do IE teachers compare with 'academic' teachers in terms of rated competence and professional morale? How are the practical skills taught and how does the style of teaching accord with the declared aims of IE? What do IE teachers perceive to be the main problems related to IE and to their own job? What role did the Swedish volunteer teachers play in developing IE in the schools? How well are the provided facilities utilised? Is the level of equipment too advanced? What happens to IE students after lower secondary school? What uses do they have of IE? In particular, does IE help them in earning a living? How does IE compare with other subjects in terms of recurrent costs and development costs? What has SIDA spent on aid to IE and what have these expenditures been devoted to?

The main report (Lauglo, 1985a) from the project addresses the full range of these questions. In the present paper we shall focus more narrowly on the status of IE in the schools and on the destination of students.

3. The Status of IE in the Schools

A. Ratings by school staffs

Three groups of staff answered questionnaires: headmasters of IE schools, teachers of IE, and at each school certain designated 'other teachers'. These 'other teachers' were the heads of department in Mathematics, Science, English, Geography and the teacher with special responsibility for careers guidance. A very high rate of response was obtained from all these categories. Only from 5 out of the 35 government-maintained schools did we end up with no response from one or more category of staff. Nearly complete returns were obtained from the schools that were reached.

They were asked: "How popular is IE among students compared to other school subjects?" Table 1 shows that even amongst 'other teachers' - these take the most hard-nosed view - the vast majority rate IE to be 'about the same' or 'more' popular than other subjects.

Table 1. Teachers' Ratings of the Popularity of IE Subjects

Response option	IE teachers	Headmasters	Other teachers
Much more popular	28.6%	12.1%	9.6%
More popular	35.7	36.4	18.4
About the same	18.8	39.4	44.9
Less popular	16.1	9.1	25.7
Much less popular	0.9	3.0	1.5
Total	100.-	100.-	100.-
No. of cases	(112)	(33)	(136)

'Popularity' is not necessarily an indicator of 'high status'. It could be that students are attracted to a subject because it is widely perceived to be a 'soft option', i.e., that it is relatively easy to pass and do well in. But few teachers perceive IE to be a 'soft option'. They were asked: "In your school, is it easier for a student to get a good grade in IE than in other KCE subjects?" In each category of staff, only 30-33% answered "Yes" or "Yes, very much" to these question, whilst 47-58% accross the three categories said "No" or "No, not at all" - the others answered "Don't know".

Further, most school staffs do not think that IE is more suited for academically weak students than for those who do well. They were asked: "For what group of students do you think IE is better suited? 'the academically above average' or 'those below average'?" Again one sees (Table 2) that it is the 'other teachers' who have the least generous view of IE. But even among this group, the vast majority do not see IE as a subject that would be especially appropriate for 'academic rejects'.

Table 2. For what type of student do school staffs think IE is especially suited?

Response option	IE teachers	Headmasters	Other teachers
Those above average	59.8%	42.4%	11.9%
Equally suited for both groups	40.2	45.5	66.4
Those below average	-	12.1	21.6
Total	100.-	100.-	100.-
No. of cases	(112)	(33)	(134)

B. Analysis of Examination Results

One might suspect that these ratings are subject to bias in favour of what teachers and headmasters think the Ministry of Education and SIDA would like to see. If so, IE could still be a 'soft option' which as an examination subject would tend to recruit students who do poorly in academic subjects. Is this the case?

Examination results at IE schools were consulted in order to answer these questions. It was found that at most schools, the IE results were on the average poorer than the results in English and Mathematics. IE could still be a 'soft option' in the exam if those who take it are academically weak and do worse than others in Maths and English. To shed light on this question, we examined the examination results of only those students who did IE. Do these students perform better in IE or in Maths and English? Data were available for 22 schools in the 1983 KCE examination. It was found that in all but 4 of these schools, the same students did on the average marginally or substantially better in the compulsory academic subjects of English and Maths, than they did in IE. Thus, if IE is popular, it is not because it is an easy subject to excel in.

In these circumstances, who takes IE as an examination subject? 'high flyers' or those who perform below average in key academic subjects? The former would indicate that IE has high status in the schools. The latter would suggest the opposite. By comparing students taking IE as an exam subject with the greater number who do not (but who also took it as a compulsory subject in forms 1 and 2), in terms of their academic achievement, an answer is provided. Figure 1 gives such a comparison for Mathematics, Figure 2 for English. In these charts, a numerically low grade indicates a good result on a marking scale from 1 to 9 (9 is a failure). The diagonal line in the charts runs through the points where these two groups of students would have the same average grade. At all schools falling below the diagonal, the IE students did on the average better than students not continuing with IE beyond form 2. Figure 1 shows a very

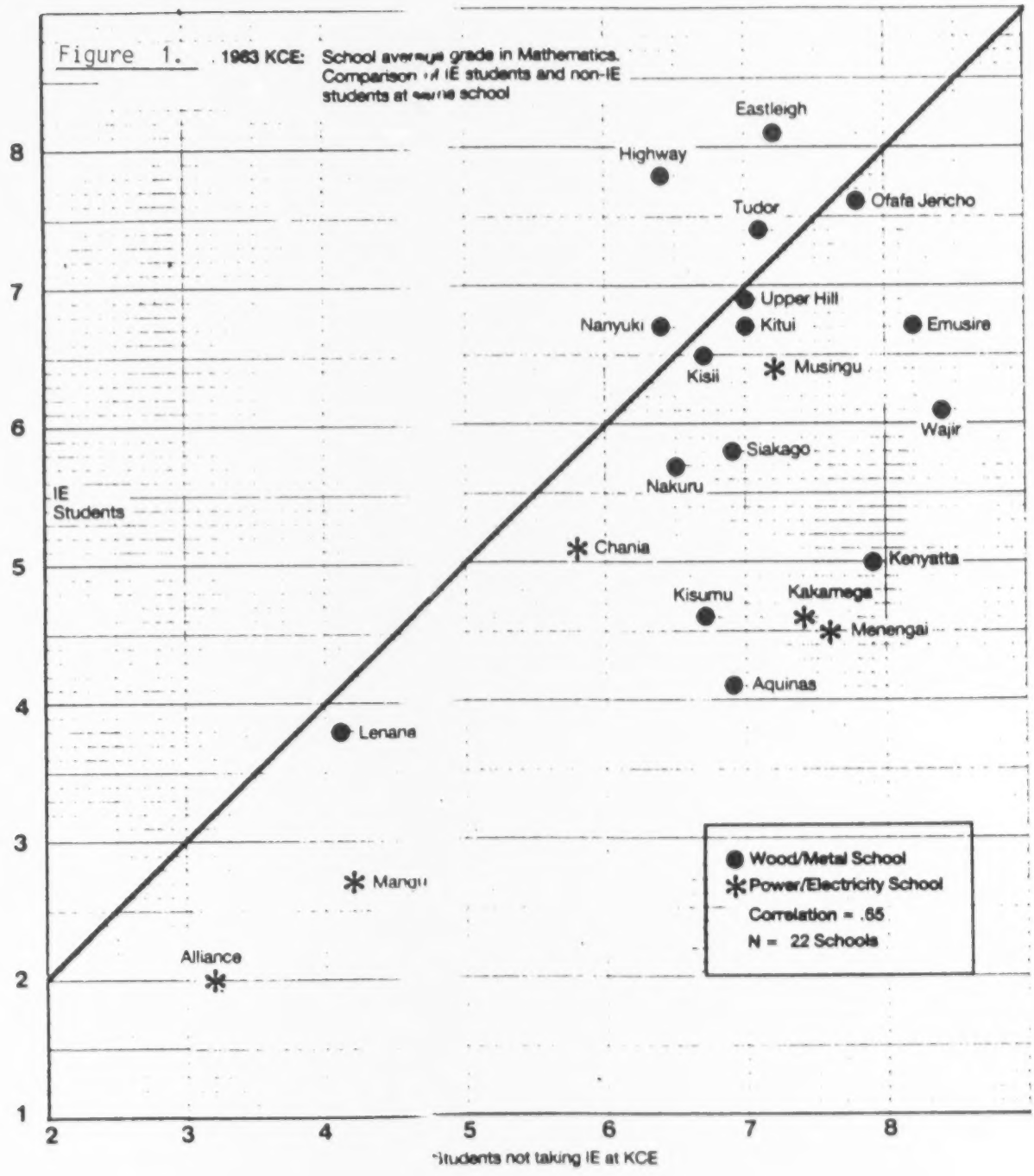


Figure 1. 1983 KCE: School average grade in Mathematics. Comparison of IE students and non-IE students at same school
Eastleigh
Highway
Tudor
Ofafa Jericho
Upper Hill
Nanyuki
Kitui
Emusire
Kisii
Musingu
Wajir
Siakago
Nakuru
IE Students
Chania
Kenyatta
Kisumu
Kakamega
Menengai
Aquinas
Lenana
Mangu
Alliance
Wood/Metal School
Power/Electricity School
Correlation = .65
N = 22 Schools
Students not taking IE at KCE
1
2
3
4
5
6
7
8

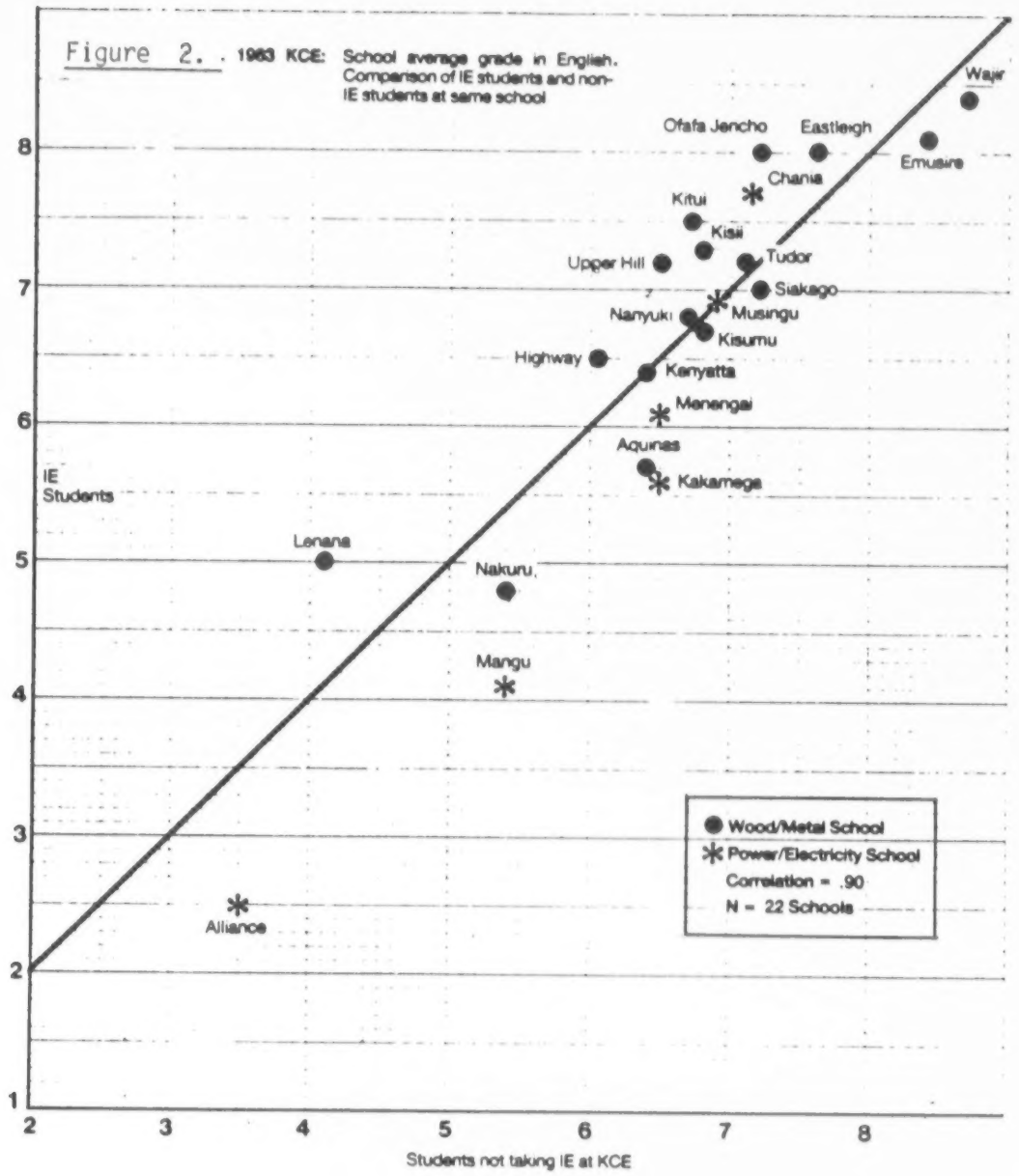


Figure 2. . 1983 KCE: School average grade in English. Comparison of IE students and non-IE students at same school
Wajir
Ofafa Jericho
Eastleigh
Embu
Chania
Kitui
Kisii
Upper Hill
Tudor
Siakago
Nanyuki
Musingu
Kisumu
Highway
Kenyatta
Menengai
Aquinas
Kakamega
Lenana
Nakuru
Mangu
Alliance
Wood/Metal School
Power/Electricity School
Correlation = .90
N = 22 Schools
IE Students
Students not taking IE at KCE
1
2
3
4
5
6
7
8

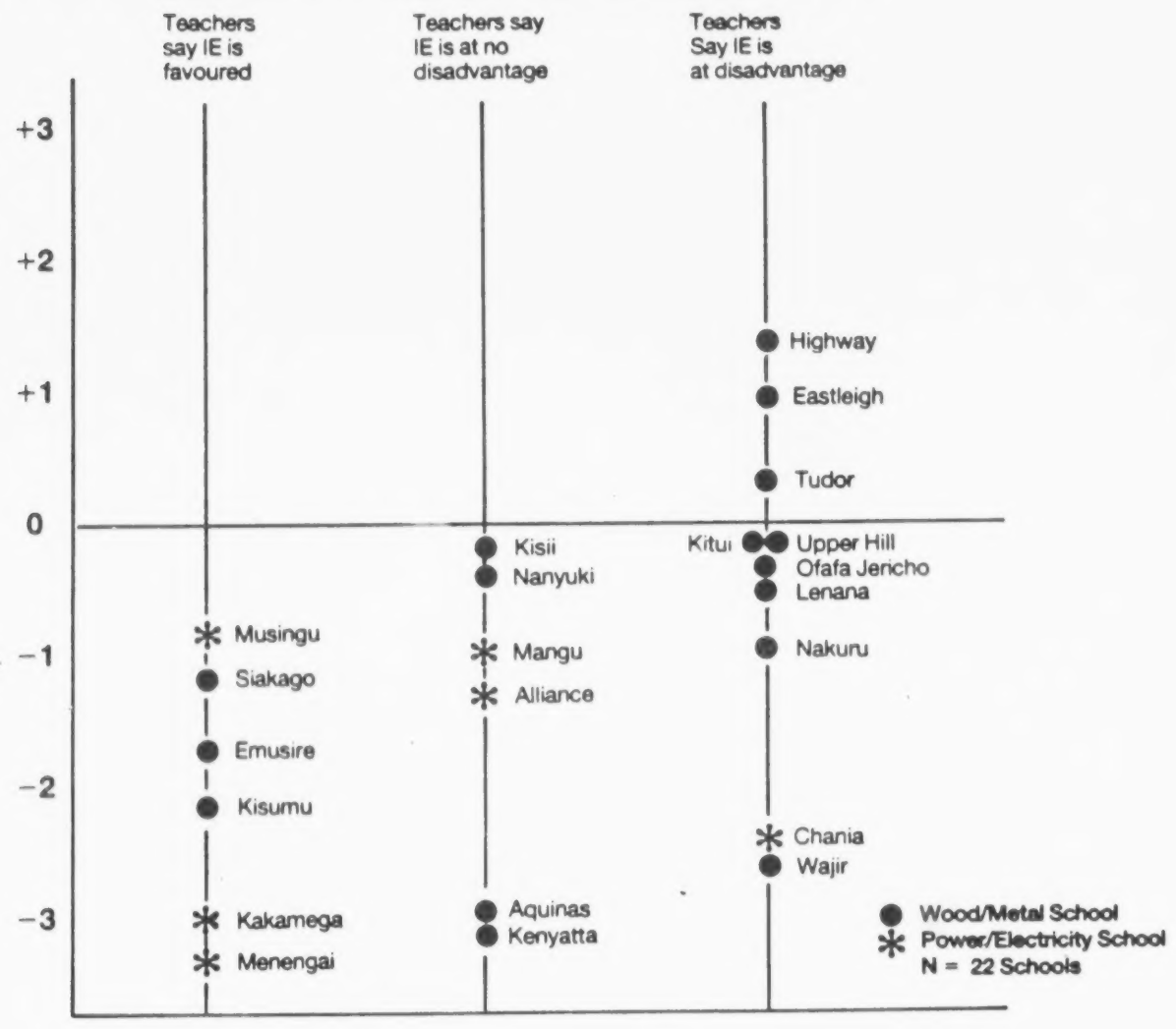
clear tendency: at most schools the IE students do better in Mathematics than the non-IE students. This is also true for the 'top elite' schools of Alliance, Mangu, and Lenana. Further, one notes that the schools teaching the more 'advanced-technology' versions of IE - Power Mechanics and Electrical Technology - stand out more clearly in this respect than those teaching Wood Technology and Metal Technology. A similar affinity between practical/technical subjects and Maths performance is also found in the technical secondary schools in Kenya (Lauglo,1985b). As to English achievement (Figure 2) a different picture emerges: Here the schools are quite evenly distributed below and above the 'equal average grades' diagonal. But also in this case there is clearly no general tendency for IE students to be academically inferior to non-IE students.

For both of these core academic subjects, especially for Mathematics, there are considerable differences among the schools. What lies behind these differences? One possibility is the streaming practices. At most schools there are restrictions on what optional subjects students may combine in forms 3 and 4, within the range of offerings. The IE teachers were asked (group interviews supplemented by questionnaires): Are there any KCE subjects which may be taken by students in other streams, but not in the streams that takes IE at your school?" The subjects most frequently mentioned among the 35 schools for which data were obtained, were: 'business subjects', 'religious education', history, 'pure science' (rather than the 'integrated' physical science which tends to have lower status), and agriculture. They were also asked: "Does this streaming discourage brighter students from taking IE at form 3 level?" How far does the perceived disadvantage or advantage due to streaming arrangements explain the relative academic calibre of IE students, as compared with non-IE students, in the different schools? Figure 3 presents some pertinent findings, using Mathematics as the indicator of 'academic calibre'.

Information was available for only 22 schools. These are grouped according to the IE teachers' assessment. The scale shows: (Maths average grade for IE students) minus (Maths average grade for non-IE students). Since a 'good' grade is a numerically low one, a negative difference means that IE students did better than non-IE students. The chart shows a pattern in the expected direction. IE students tend to stand out more favourably in Maths, compared to non-IE students, when IE teachers think their subject is favoured by the streaming arrangements. But the attraction of IE to students of good academic ability is shown by the fact that even when IE teachers feel their subject is discriminated against, IE is in most cases able to 'hold its own' in attracting students who do well in Mathematics.

It could be argued that IE has been favoured with so much special assistance that the findings above are unlikely to apply to other pre-vocational or practical subjects which have not similarly benefitted from comprehensive external support. To examine this possibility, other practical or pre-vocational subjects which also happened to be taught in IE schools were studied - again in terms of the Mathematics achievement among students taking these subjects as compared with students not taking such subjects for examination purposes. Ten schools offered Principles of Accounts. In six of these schools, students taking Accounts did better than other

Figure 3. KCE 1983: The difference between average Maths grade of IE students and other students at same school, by IE Teachers' impression about the effect on IE of streaming/setting arrangements at the school



students in Mathematics. Twelve schools offered Commerce. At five of these schools, the 'Commerce students' did better than other students in Mathematics. Finally, five schools offered Agriculture. At four of these schools, students taking Agriculture did on the average better in Mathematics than other students. Clearly, on the whole, the limited data available do not suggest that other practical/ pre-vocational subjects, either, suffer the fate of being inferior options that mainly attract academically 'inferior' students.

C. Teacher Morale

Headmasters were asked to rate their IE teachers in terms of relative competence: "In general, how good are your IE teachers compared with your other teachers, in teaching their subject?" Forty-eight percent of 34 headmasters answered either "Better" or "Slightly better"; and 59 percent gave "About the same" as their answer. Only one headmaster gave the rating "Slightly worse". None rated the IE teachers as clearly "Worse". Most of these ratings were obtained during face to face interviews with the impression of frank answers. A very great response bias would indeed be required to invalidate the conclusion that headmasters do not regard the IE teachers as professionally inferior to teachers in academic subjects. But the headmasters - insofar as they had a basis for comparison - did tend to think that the IE teachers were not as competent as their Swedish volunteer predecessors (before 1981) in establishing workshops and maintaining/repairing equipment. Those IE teachers who had worked alongside a volunteer tended also to have this view themselves.

IE teachers have the same official weekly allocation of teaching periods as academic teachers. During group interviews, the IE teachers invariably argued that IE teaching requires more extra time than academic teaching - for preparing materials, sharpening tools, maintaining equipment, and keeping inventories. Headmasters and the sample of 'other teachers' were asked: "Actual teaching time is only a part of the teacher's work. How much extra time do you think is needed in IE as compared with academic subjects in order to prepare, maintain equipment, etc?" Seventy-six percent of the 34 headmasters and 75 percent of 132 'other teachers' who answered, said either "Much more time" or "More time". The remainder answered "About the same" with the exception of only 3 'other teachers' who checked "Less time". Clearly, the IE teachers are supported in their claim of having more work.

With few exceptions, the IE teachers have been formally qualified to also teach either Mathematics or Physics - either for the full four-year course leading to the KCE exam, or for the first two years. Research currently underway by Narman shows that most of those who trained as IE teachers at Kenya Science Teachers College, teach Maths or Physics in the secondary school system. Only some 20-25 percent actually teach IE. What about our present sample, which only includes those who are teaching at schools offering IE? Given the extra work required in IE teaching, one might expect that they would prefer to do more teaching in their academic subject - especially since Maths and Physics are subjects of high status. In fact, in these schools, IE teachers are almost exclusively deployed to teach IE. About 70 percent teach no other subject. Nearly all teach more periods in IE than in their academic subject. Yet we found that IE

teachers with few exceptions prefer IE teaching to the teaching of Mathematics or Physics. They were asked: "In your case, are you happy about the balance in your present teaching load between IE and your academic subject?" Only 8 percent of them checked the answer "I would like to teach more in my academic subject". The others answered either "It is OK as it is" or "I would like to teach more IE". This is an indication of good morale, even if allowance is made for considerable response bias favouring an answer perceived to be the 'desired' one.

Other indicators point in the same direction. The IE teachers were asked: "How satisfied are you with being an IE teacher?" The 'other teachers' - who as a group had experienced greater career advancement because they are mainly a sample of heads of departments, whilst only 30 percent of IE teachers were head of department - were asked a similar question: "How satisfied are you with being a teacher?" Table 3 shows the answers from these two groups.

Table 3. Satisfaction with being an IE teacher/with being a teacher

Response option	IE teachers	Other teachers
Very satisfied	39.3%	33.3%
Satisfied	46.4	48.6
'Not sure'	5.4	0.7
Dissatisfied	8.0	13.8
Very dissatisfied	0.9	3.6
Total	100.-	100.-
No. of cases	(112)	(136)
No answer	(1)	(3)

The findings show that IE teachers are, if anything, slightly more satisfied than their academic colleagues. Again, a dramatic response bias would be needed to invalidate the conclusion that most of these teachers are, on the whole, satisfied with their profession. Of course, they might still have wished to enter a more lucrative career if they had the opportunity. Nor should it be taken to mean that there are not aspects of their work which they find difficult to cope with (Cf. Lauglo, 1985a). The IE teachers also often lament the lack of opportunities for further education and promotion within IE. But it is still safe to conclude that professional morale among IE teachers is at least as high as among teachers of academic subjects. Thus, the status of IE seems quite high, both in terms of attraction to students and teacher morale. The findings in the survey of parents/guardians of form 2 IE students at 13 schools also showed near univeral parental support for IE, as a desirable exam subject for their child (Lauglo, 1985a, Ch 7). Interestingly, there was no tendency for more educated parents to be any less keen on IE, than were those with only primary school or less, possibly because the former are more aware about the declining labour-market value of a purely academic secondary education. This greater awareness may offset the tendency which one would otherwise expect: that more educated parents would be less interested in subjects which have connotations of being part of a 'terminal' secondary schooling.

4. Student Aspirations and Destinations after School

Surveys were conducted of students while they were in the final year of their lower secondary course (Närman et al, 1984) and of students followed up about one year after their lower secondary KCE examination (Närman, 1985). In both surveys, it was generally found that students who had experienced IE had a positive view of these subjects, and there was great interest both in continuing their education and in entering occupations of a technical/practical kind.

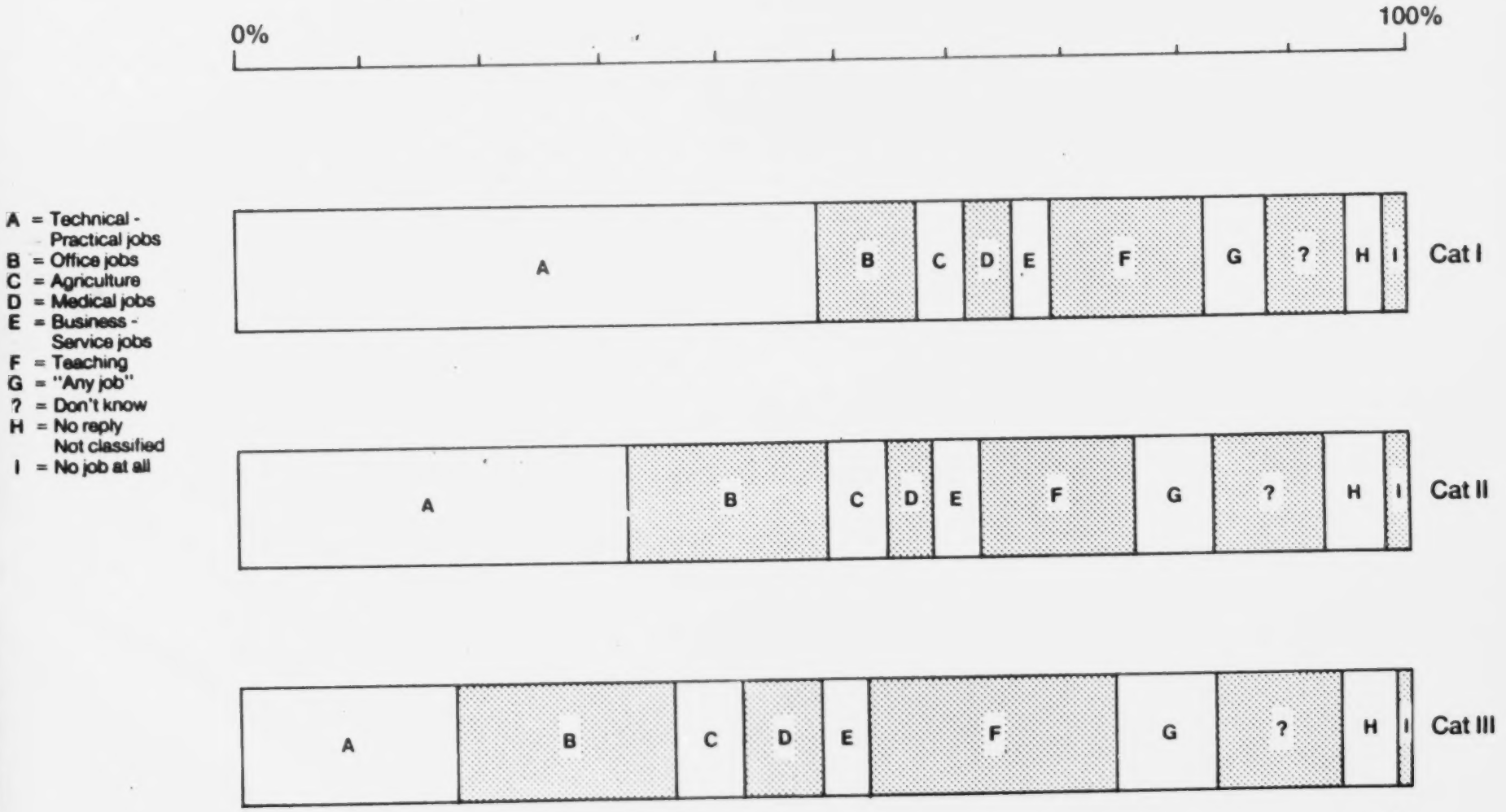
In the follow-up study three categories of students were traced: students who had taken IE for the full four-year lower secondary course in preparation for the KCE exams (Category I); those who had experience of IE in the first two forms but who had not opted for/been selected for IE in forms 3 and 4 (Category II); and students from five schools which did not offer IE but which were deemed suitable as a control group in terms of location and reputation of overall quality (Category III). The attempt was made to reach 1,514 students who sat for the KCE exam in 1983, by means of a postal questionnaire. Direct information was obtained from 1,080 (71%). These are the students for whom data on occupational aspirations and expectations are to be analysed, below. (Some of these were also contacted for personal interviews). In respect of the educational/occupational activity of ex-students, second-hand information was obtained for an additional 16% - giving a total sample of 87% (1,320 ex-students) for whom at least some information was obtained. The validity of the findings presented in this section gains support from this very high rate of success in tracing ex-students.

A. Aspirations and Expectations

In the follow-up study, the students were asked: "What kind of job would you wish to have if you could choose freely?" as an open-ended question. The answers were not specific enough to allow a classification as to educational prerequisites or level of pay. Hence, the category 'Technical/Practical jobs' includes jobs at various levels ranging from clearly manual work to technician jobs. Similarly, 'Office Jobs' range from clerical job to those of very high status. 'Agriculture', ranges from 'plucking tea' and 'food production on own farm' to 'veterinary'. 'Medical Jobs' include e.g., doctor, nurse, and local health worker. The categories should mainly be understood as a sectoral classification. Figure 4 gives the categories and the percentage share of all 'mentions' falling into each category. A few respondents gave more than one answer.
Further, the ex-students were asked: "What kind of job do you actually expect to get?" Using the same occupational groupings, the percentage distribution of answers for the three ex-student categories, is shown in Figure 5.

Figure 4. Jobs "chosen freely." Distribution of choices by type of job and category of ex-student.

Figure 5. Jobs "actually expected." Distribution of answers by type of job and category of ex-student.



The figures show that Technical/Practical jobs are highly rated both in terms of 'job if freely chosen' and the actual expectation. This is more true for 'job if freely chosen'. Thus, technical/practical jobs are not work that ex-students would end up in reluctantly. The opposite is true: the aspirations for such work exceed the expectation of being able to obtain it. In terms of 'job if chosen freely', Technical/Practical work is even preferred by 1/3 of those who had no exposure to IE at all during their years in the lower secondary school (Cat III). Clearly, such work is typically not a 'second choice', but quite popular.

Another striking finding in Figures 4 and 5 is that with greater exposure to IE, both aspirations and expectations for practical work rise very strongly. This suggests that exposure to IE has had a striking effect on students' aspirations for practical/technical work; and that it has also given those with an IE background greater confidence in eventually being able to find such work. Yet, as will be shown below, relatively few ex-IE students are able to realise such aspirations and expectations in the short run (one year after 'O'Levels). In the main, small scale tracer studies over several years (Närman et al, 1985b; and Davies, 1985) suggested that the same has been true for their career experience over a longer period, though there may be interesting differences among schools and localities.

It might be argued that the strong association of aspirations/expectations with degree of exposure to IE might result from a stronger response bias among former IE students in favour of 'desired' answers. These students might have wished to convey a favourable impression about a subject which they had chosen in school - and to please a foreign aid donor. Such a bias might be stronger for Category I students who chose to take IE as an examination subject than two Category II students who did not choose IE or who were not selected for it. The difference between Category I and II could also reflect differences in initial interest, prior to their different experience after form 2. But such explanations would not fit the observered difference between Category II and III. Indeed, if self-selection of students with kindred occupational attitudes were a strong factor, one would expect Category II to be intermediate between I and III in their attitudes, which is clearly not the case. In view of these considerations, and of the quite strong observed differences, it seems reasonable to infer that IE has indeed had the effect of interesting students in technical or practical work as a future career, so that contrary to what some critics have argued (Foster, 1965), curriculum can change students' occupational aspirations. But it should be noted that to interest these students in practical or technical work hardly is hardly the problem. The interest is quite strong even among those with no exposure to practical subjects. The problem that students face is being able to realise their ambitions.

It is striking that 'Teaching' - the modern sector job that all students are regularly exposed to over many years, is not popular. Only in some 8-9% of the answers is it the job aspired to. But it is more often the job an ex-student expects. For many ex-students who start teaching, it is not a choice at all but simply an available

opportunity which they settle for when they are unable to realise their hopes. Conversely, both Technical/Practical jobs and jobs in Agriculture stand out as quite popular occupational areas to which access is perceived to be difficult. The fact that these answers were given by former lower secondary students one year after their 'O'Levels examination indicates that these perceptions are based on some experience about how difficult it is to gain access to various types of work or further schooling after 'O'Levels.

5. The Destination of Ex-students and the Uses of IE

Table 4 shows the main activity about one year after the 'O'Levels examination, of ex-students with varying degrees of exposure to IE. One notes that the percentage differences among the three categories are negligible. In the short run, students with greater exposure to IE cannot be said to possess any advantage over others in finding employment.

Table 4. Main Activity of Ex-students one Year after Form 4.

Main Activity	Cat. I: Students who had 4 years of IE	Cat. II: Students who had IE in Forms I+II	Cat. III: Students at non-IE schools	Total
Form 5	40%	39%	43%	40%
Repeating form 4	4	5	6	5
Work	6	7	5	6
Training	5	5	6	6
Looking for work	45	43	40	43
Total	100%	99%	100%	100%
No. of cases	(320)	(551)	(205)	(1,080)

Table 4 includes only those ex-students for whom direct information was obtained. If one also includes the additional 240 ex-students for whom some secondary information was obtained (usually from students who had some knowledge about what others were doing), we would get 44%, 46%, and 48% in Form 5 for Cat. I, II, and III respectively; and the rates of unemployment (looking for work) would be reduced to 40%, 38%, and 34% respectively. However, since one could most easily obtain second-hand information about those ex-students who had continued in school, these adjusted figures would understate the true percentage 'looking for work' and exaggerate the percentage continuing to Form 5.

Clearly, not even the negligible differences that do exist, indicate that IE confers any labour market advantage. One should also note that the Category I students in this sample were in no way academically inferior to the others. In fact their Maths results were a bit better.

The survey showed that not less than 90% of the students aspired to enter form 5. Many fail to realise this ambition. But the Table nonetheless shows that a strikingly high percentage of students from all three categories succeed in entering Form 5. This is a reflection of the high academic calibre of the IE schools as a group. A further striking finding is the high proportion in all three categories who after one year are still looking for work. In comparison, the percentage who have either found employment or succeeded in gaining access to an employment-based training programme is quite low. Thus, also for these relatively elite schools, school leavers face very great difficulty in finding employment. The hope which many parents and students have had, that IE can make a difference in this respect, is not borne out by the post-school reality, at least not in the short run. It should however be emphasized that a one-year follow-up is too short a period for a definitive answer to the question of labour market advantage. We therefore hope to extend the follow-up to a three-year period.

Data presented by Närman (1985) did show a slight tendency for ex-students with an IE background to leave home in search for work less often than did others, possibly because they thought their IE skills gave them a better chance of making a living at home.

In view of the negative findings in Table 4, the question arises: What gives school-leavers an advantage in the quest for jobs after Form 4? Is it general academic achievement? Predictably, it was found that those with good exam results stand a much better chance than others of gaining admission to Form 5. More than 90% of those who obtained Division I (the best results), and 70% of those with Division II were able to continue to Form 5, as compared with 22% of those with Division III and even 3% of those who barely passed (Division IV). Our concern is, however, with those who did not continue to Form 5 or who repeated Form 4, but who entered the labour market in search of jobs or employment-based training opportunity. Table 5 shows how these 564 ex-students fared in the labour market during their first year out of school.

Table 5. Do KCE examination results give those who leave school, rather than going on to Form 5, any advantage in the labour market during their first year after school?

	Examination Results				
Do they find work?	Division I and II	Division III	Division IV	Fail	Total
Work or 'training'	16%	13%	30%	36%	21%
Looking for work	84	87	70	64	79
Total	100%	100%	100%	100%	100%
No. of cases	(91)	(252)	(176)	(45)	(564)

Chi-square = 26.32, P(Chi-square) < .001

The pattern in Table 5 is quite startling. It is in fact the ex-students with the poorest examination results - Division IV or Failure, who most often have become employed or gained access to a job-related training programme. Indeed, the trend is highly statistically significant. Superficially at least, this finding flies in the face of much writing, often based on impressions rather than empirical research, about the credentialist mentality of employers in developing countries.

It is likely that those with better exam results set their sights higher and that they therefore are willing to hold out longer for 'suitable' employment. Further analysis is planned to examine the strength of a possible tendency of this kind. But the strength of the zero-order negative association between exam results and being employed or under training, in Table 5, is considerable. It seems at the moment unlikely that the above-noted possible tendency would be so strong that it would mask a true positive association of any importance between examination results and labour market advantage for this sample. It is therefore reasonable to question the conventional wisdom that credentials and exam results are of great importance in access to jobs in the highly competitive labour market facing lower secondary school leavers in Kenya.

What gives advantage, then? We can reasonably speculate that personal contacts must be of considerable importance. Connections through kinship networks or networks related to home location are likely to matter greatly. Employment may be obtained through sponsorship by persons known to the employer, sponsors who vouch for the applicant's integrity, willingness to learn and to work hard. If school credentials in general play a very small part in selection to jobs, it is not surprising that specialist subjects also fail to give any advantage - and especially so in the case of IE which is only offered in a small number of schools and unlikely to be known by many employers. Indeed, nearly all IE teachers complained that their subject suffers from lack of awareness among employers (noted during group interviews). Also, the exploratory survey (Sifuna, 1984) of employers who were known to have hired former IE students, showed that they often had low awareness of IE and doubted the value of school-based training as preparation for practical work. Such scepticism among Kenyan employers has been noted by others (e.g., King, 1977).

The questions raised above point to the need for research on the process of search for opportunity which school leavers embark upon. With the notable exception of Hopper's (1985) study in Lusaka, the the research literature on the search for opportunity which school leavers embark upon, is very sparse. Our research also indicates the need for long-term tracer studies of ex-students with different types and quality of credentials from school. It may be that skills acquired in IE and other pre-vocational subjects are of economic value for those who succeed in gaining access to the type of employment which enables the ex-students to put these skills to use. Our findings too suggested that, when ex-students had succeeded in finding a job, those with some exposure to IE did seem to be employed in technical/practical work a bit more often than students with no experience of IE at all - in spite of the fact that IE seemed to give no overall advantage in securing some kind of employment. But the

sub-samples are in this case so small that firm inferences are not warranted. Very few ex-students (only 6 out of the 1,080) were self-employed. But some others may occasionally engage in activities which are kindred to 'self-employment'. During interviews with ex-students, it appeared that there are a number of persons who do not see themselves as 'self-employed' but who nevertheless are engaged in various short-term activities from which they derive some contribution to their livelihood. But the long-term tracer studies of small samples of IE students from four schools (Narman et al, 1984b; Davies, in Cumming et al, 1985) showed very few cases of self-employment of any durable kind. When self-employment did occur, it seemed to be of an episodic character: a short-term activity engaged in between periods of education or employment.

In general, our findings from surveys of students after school support the view that the economic usefulness of pre-vocational subjects need to be assessed in light of the realistically available opportunities that students have after school, for work or further training. If such opportunities are strictly limited - and allocated largely according to other criteria than school credentials, it is fallacious to expect that training will lead to much utilisation of skills even when students are keen to pursue careers that would enable them to use these skills.

In the case of IE, the skills seem to find little use after school as a means of earning a livelihood or for further training. But that is not to say that students do not value the usefulness of IE. The former IE students (Category I and II) in the one-year follow-up study were asked: "Have you had any use of IE so far?" Fully 75% of them answered 'Yes'. But the kind of usage they most often reported was of private character: repairing or making articles in their homes or helping relatives. Only a small minority reported any usage in working life or in their further schooling. Thus, the pattern of usage accorded with a definition of IE as general education rather than with the the view that IE has a pre-vocational function. For such general education purposes, it is skill in the use of quite simple handtools which is most readily utilised, not skill in the use of power tools and machines.

6. Concluding Remarks

The findings have implications for international debate about pre-vocational subjects and the merits of 'diversified secondary education'. In accord with critical commentary, we also conclude (Cf. Lauglo, 1985a) that such subjects are considerably more expensive than academic subjects and that they demand more managerial expertise and intitiative for their establishment and maintenance. But the case of IE in Kenya does show that such subjects can be established as entirely viable pedagogic systems. There is no international 'iron law' by which such subjects are relegated to inferior status in the schools in terms of teacher morale and attraction to parents and students. On the other hand, what can be achieved in a limited number of schools over a decade or so, by comprehensive resource inputs that included teacher training,

expatriate volunteer teachers, external assistance to workshop establishment and equipment, and the provision of an external support system for maintenance and supplies - is not necessarily indicative of what can be achieved on a large scale in an entire national system.

It is likely that the increasingly difficult labour market for secondary school leavers is interpreted by students and parents alike - as it is by policy-makers - to mean that practical subjects will give a labour market advantage. These subjects gain status from that perception, especially when taking them does not imply that students forfeit opportunities for further study of an academic kind. In such conditions of relatively high status for practical subjects, exposure to them seems in the Kenyan case to influence the occupational aspirations of students in spite of the counter claim that 'curriculum does not shape occupational aspirations, the structure of opportunity does' (Foster, 1965; Blaug, 1973). But, under present labour market conditions, lack of student interest in practical or technical work is not a problem in need of remedy. There is no shortage of such interest among Kenyan secondary school students today.

Our research supports the view that the status of pre-vocational subjects will reflect, i.a., the perceptions that students and parents have of the labour market and training opportunities towards which such subjects point. But these perceptions are 'through a glass darkly': the hopes appear to be an optimistic distortion of labour market reality.

Present policy in Kenya and many other countries favours the expansion of pre-vocational subjects in secondary schools, and also in the upper classes of primary school. Our research supports the view that because such subjects are expensive and have demanding logistics requirements, they should not be launched as large-scale programmes for quick implementation throughout a national system of education. Equally important: the most realistic justification for such subjects are their merits on general education grounds, rather than relevance for employment or self-employment. The curriculum and the tools and equipment required should reflect such justifications. Policy makers should face the question: do the general education benefits of these subjects merit the expense and development effort which they require?

REFERENCES

Blaug, Mark
1973 Education and the Employment Problem in Developing Countries. Geneva: International Labour Organisation.

Cumming, Christopher; Martin Davies; Kevin Lillis; and Ben Nyagah
1985 Practical Subjects in Kenyan Academic Secondary Schools. Background Papers. Stockholm: Swedish International Development Authority, Education Division documents. No.22.

Cumming, C. E.; and J. Lauglo
Reflections on an Evaluation in Third World Education (forthcoming journal article)

Foster, Philip J
1965 The Vocational School Fallacy in Development Planning. In C. A. Anderson and Mary Jean Bowman (eds.), Education and Economic Development. Chicago: Aldine.

Grubb, W. Norton
1985 The Convergence of Educational Systems and the Role of Vocationalism. Comparative Education Review, vol. 29 (No.4, 1985)

Hoppers, Wim
1985 From School to Work: Youth, Non-formal Training and Employment in Lusaka. The Hague: Centre for the Study of Education in Developing Countries (CESO)

King, Kenneth
1977 The African Artisan. New York: Teachers College Press/Heinemanns Educational

Lauglo, Jon
1985a Practical Subjects in Kenyan Academic Secondary Schools. General Report. Stockholm: Swedish International Development Authority. Education Division documents. No. 20.

Lauglo, Jon
1985b Technical Secondary Schools in Kenya. An Assessment. Stockholm: Swedish International Development Authority. Education Division documents. No. 26

Lauglo, Jon
1983 Concepts of 'General Education' and 'Vocational Education' Curricula for Post-compulsory Schooling in Western Industrialised Countries: When Shall the Twain Meet? Comparative Education, vol. 19 (No 3, 1983)

Lillis, Kevin
1985 Processes of Secondary Curriculum Innovation in Kenya. Comparative Education Review, vol. 29 (No 1, 1985)

Lillis, K. M. and D. F. Hogan
1983 Dilemmas of Diversification: Problems Associated with Vocational Education in Developing Countries. Comparative Education, vol. 19 (No. 1, 1983)

Narman, Anders
1985 Practical Subjects in Kenyan Academic Secondary Schools. Tracer Study. Stockholm: Swedish International Development Authority. Education Division documents. No.21

Narman, Anders; Eigil Hegmar, Paula Oksanen, and Annica Wallenheim
1984a Industrial Education Students in Kenya. Who are They? How do They Perceive Industrial Education? Gothenburg: Department of Human and Economic Geography, University of Gothenburg. Occasional Papers No. 5, 1984.

Narman, Anders; Eigil Hegmar, Paula Oksanen, & Annica Wallenheim
1984b A Tracer Study of Ex-Industrial Education Students from Three Schools in Kenya. Gothenburg: Department of Human and Economic Geography, University of Gothenburg. Occasional Papers No. 4, 1985.

Psacharopoulos, George
1985 Curriculum Diversification in Colombia and Tanzania: An Evaluation. Comparative Education Review, vol. 29 (No.4, 1985)

Psacharopoulos, George; and William Loxley
1985 Diversified Secondary Education and Development: Evidence from Colombia and Tanzania. Baltimore: Johns Hopkins University Press.

Psacharopoulos, George
1980 Higher Education in Developing Countries: A Cost-Benefit Analysis. Washington: World Bank Staff Working Paper No.440.

Sifuna, Daniel
1984 Report on Employers' Views of Industrial Education. [manuscript, report for Industrial Education evaluation, October, 1984]

Weeks, Sheldon
1978 The Foster Fallacy in Educational Planning. Port Moresby: University of Papua New Guinea. Education Research Unit Research Report No. 32.

Wilms, Wellford W; and Stephen Hansell
1982 The Dubious Promise of Post-secondary Vocational Education: Its Payoff to Dropouts and Graduates in the USA. International Journal of Educational Development, vol. 2 (No. 1, 1982).